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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,248

01/04/2006

Mitsuru Uesugi

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EXAMINER

WILLIAMS, LAWRENCE B

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,248	<b>Applicant(s)</b> UESUGI, MITSURU	
	<b>Examiner</b> LAWRENCE B. WILLIAMS	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 is/are allowed.
- 6) ☒ Claim(s) 12, 13, 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation, “an inverse discrete Fourier transformer is applied to the spreading code generator and the spreader”. The specification makes reference to generation of the spreading codes and spreading processing by the inverse discrete Fourier transformer (pg. 30, lines 27; pg. 31, lines 8-23), but does not make reference to “an inverse discrete Fourier transformer is applied to the spreading code generator and the spreader” as disclosed in claim 1. The examiner suggests applicant rewrite the claim to particularly point out and distinctly claim the subject matter as claimed. The examiner suggests the language used in claim 14; “a discrete Fourier transformer is used to constitute the spreading code generator and the despreaders”.

3. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitation, “a plurality of cascaded inverse discrete Fourier transformers *is applied* to the spreading code generator and the spreader”. The specification

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indicates that the plurality of cascaded inverse discrete transformers are used for generation of the spreading codes and spreading processing (pg. 34, Embodiment 6), but does not make reference to “a plurality of cascaded inverse discrete Fourier transformers *is applied* to the spreading code generator and the spreader” as disclosed in claim 13. The examiner suggests applicant rewrite the claim to particularly point out and distinctly claim the subject matter as claimed.

4. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the limitation, “a plurality of cascaded discrete Fourier transformers *is applied* to the spreading code generator and the despreaders”. The specification indicates that the plurality of cascaded discrete transformers are used for generation of the spreading codes and spreading processing (pg. 35, line 24-pg. 36, line 24), but does not make reference to “a plurality of cascaded discrete Fourier transformers *is applied* to the spreading code generator and the despreaders” as disclosed in claim 13. The examiner suggests applicant rewrite the claim to particularly point out and distinctly claim the subject matter as claimed.

***Allowable Subject Matter***

5. Claim 14 is allowed.

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6. Claims 12, 13, 15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Papadimitriou et al. discloses in US 2005/0031018 A1 IDFT matrix with elements

$$C[\alpha, \beta] \equiv W_N^{\alpha, \beta} \equiv e^{i2\pi\alpha\beta/N}, \alpha, \beta = 0, 1, \dots, N-1 \text{ and that spreading sequences are provided by } e^{i2\pi\alpha\beta/N}.$$

b.) Ohmi et al. discloses in US Patent 7,330,496 B1 System And Method For Spread Spectrum Communication, a spreading code generating apparatus which applies an inverse Fourier transform to the spreading codes but does not teach inverse discrete transformer for generation of the spreading codes and spreading processing.

c.) Cha et al. discloses Design of Collision –Free Codes Based on MAI-Free Principle in International Conference on Intelligent Information Hiding and Multimedia Signal Processing.

d.) Ojha et al. discloses a method of generating spreading codes (polyphase codes are inherently one of spreading codes) in IEEE, Impact of Noise and Target Fluctuation on the Performance of Polyphase Coded Radar Signals but doesn't teach an inverse discrete Fourier transform implementing the spreading code generator and spreading processing.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037.

The examiner can normally be reached on Monday-Friday (8:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tesfaldet Bocure/  
Primary Examiner, Art Unit 2611

lbw  
June 30, 2009